Remarks/Arguments

Interview Summary

The undersigned held a telephonic conference with the Examiner on April 22, 2009. The following is a brief summary of some points covered during the conference:

1. The Examiner identified the limitation: "wherein the stiffening ring is joined to the inner circumferential edge of the base ring (2) or the outer circumferential edge of the base ring (2) in a firm or form-locking manner" as the limitation the Examiner considers as being directed to a non-elected species.
2. The undersigned believes that support is present in the instant specification for the above limitation being applicable to species 1. The Examiner disagreed.

Amendments to the Claims

The claim amendments and the new claims are fully supported by the instant application.

The recitation in Claims 2 and 23-25 of: "wherein the stiffening ring is joined to the inner circumferential edge of the base ring (2) or the outer circumferential edge of the base ring (2) in a firm or form-locking manner" and new Claim 28 are supported by page 7, lines 11 through 16 of the instant specification.

Claim 29 is supported by page 7, lines 11 through 16 of the instant specification and the fact that Claim 2 recites the stiffening ring and the protective layer as being produced of a single piece of material.

No new matter has been added.

Notice of Non-Compliant Amendment

In the Notice of Non-Compliance dated March 13, 2009, the Examiner stated that Claims 2-4, 9, 13, 15, 23-25, 28, and 29 were withdrawn as being directed to non-elected embodiments. The Examiner did not provide any detail or further support regarding the alleged direction to non-elected species. In the telephonic conference noted above, the Examiner cited the limitation: "wherein the stiffening ring is joined to the inner circumferential edge of the base ring (2) or the

outer circumferential edge of the base ring (2) in a firm or form-locking manner," recited in Claims 2 and 23-25 as being directed to a non-elected species.

Applicant respectfully traverses the Notice and withdrawal of the claims.

Paragraph [0019] of the instant specification states: "The stiffening ring is expediently joined to the base ring in a firm or form-locking manner. In a preferred version, the stiffening ring is positively vulcanized into the elastically deformable material of the base ring, the stiffening ring being completely or, also, only partially enclosed by the elastic material. In an alternative version, the base ring and stiffening ring are joined by injection molding or adhesion production methods, known per se, which are suitable for such joining."

The paragraph is not modified or limited by stating that the joining of the stiffening ring and base ring is applicable to only a particular embodiment or figure. Instead, the paragraph makes a blanket statement that the stiffening ring is joined to the base ring. Therefore, the statement is applicable to Figures 1 and 2. Further, the paragraph provides information as to possible techniques for joining the rings, for example, vulcanization or adhesion production methods. Nothing in the descriptions of Figures 1 and 2 contradicts the teaching that the stiffening ring is joined to the base ring.

Vulcanization, injection molding, and adhesion methods are all well known in the art, and one skilled in the art would be able to produce the claimed invention using the instant specification and figures. For example, the specification and figures clearly show the nature and configuration of the sealing ring components, such as the base ring, stiffening ring, and protective layer, and with this information, one skilled in the art could easily apply the well-known methods described above.

Withdrawn species 2 is directed to Figure 3. Paragraph [0027] of the instant specification describes Figure 3 as follows: "In the variant according to Figure 3, the stiffening ring 3" is provided at the outer circumferential edge of the base ring 2 although, in contrast with the variants according to Figures 1 and 2, it is not formed as a single piece with the material of the protective layer 4. In the variant according to Figure 3, the stiffening ring 3" is composed of

hard plastic or metal, and is embedded in form-locking manner into the elastically deformable material 6 of the base ring 2."

The key difference between Figures 1 and 2 and Figure 3 is that the stiffening ring is separate from the base ring. The paragraph also provides further detail to supplement the general teaching in paragraph [0019] regarding the joining of the base and stiffening rings, specifically, that the stiffening ring is embedded in the base ring. There is nothing in paragraph [0027] or Figure 3 that negates the applicability of paragraph [0019] to Figures 1 and 2, that is, the configuration of the stiffening and base rings in Figure 3 is a further step of the general teaching of paragraph [0019].

Withdrawn species 3 is directed to Claim 21 which recites: "at least one stiffening segment (3, 3', 3'), wherein the at least one stiffening segment is connected to at least one of the inner and outer circumferential edges, wherein the at least one stiffening segment covers less than the entire inner and outer circumferential edges,"

Thus, rather than a stiffening ring, Claim 21 recites one or more stiffening segments that cover less than the respective inner or outer circumferential edge of the base ring. This is clearly a different configuration than the stiffening ring configuration recited in Claims 2 and 23-25.

For all the reasons noted above, amended Claims 2-4, 9, 13, 15, 23-25, 28, and 29 are directed to elected species 1.

Applicant courteously requests that the claims be entered.

The Rejection of Claims 2-4, 7-9, 11-13, 15, and 23-27 Under 35 U.S.C. §103(a)

The Examiner rejected Claims 2-4, 7-9, 11-13, 15, and 23-27 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 2,859,061 (Reid) in view of United States Patent No. 3,531,133 (Sheesley). Applicants respectfully traverse the rejection.

Claim 2

Reid does not join the stiffening ring to the core

Amended Claim 2 recites: "wherein the stiffening ring is joined to the inner circumferential edge of the base ring (2) or the outer circumferential edge of the base ring (2) in a firm or form-locking manner"

The Examiner cited lips 16, which are part of covering 18, of Reid as teaching the stiffening ring recited in Claim 2. Assuming *arguendo* that lips 16 of Reid are analogous to the stiffening ring recited in Claim 2, Reid does not teach joining the lips to core 17. For example, regarding the equivalent configuration shown in Figures 1 and 2, Reid explicitly discloses: "the covering completely encloses the core, *but is not sealed or bonded to the core*." (emphasis added) (col. 4, lines 46 and 47). Further: "This sealing is effected without sealing to the core that portion of the covering 3 which conforms to the cross sectional shape of the core." (col. 4, lines 55-58). Reid further teaches sealing lips 16 as taught for the ring in Figure 1 (col. 6, lines 38-40).

Reid teaches against joining the stiffening ring to the core

As noted above, Reid teaches that the cover (including the sealing lips) is not to be sealed or bonded to the core, which is the opposite of the configuration recited in Claim 2.

"A *prima facie* case of obviousness can be rebutted if one of the cited references teaches away from the claimed invention. See *In re Geisler*, 43 U.S.P.Q. 2d 1362, 1366 (Fed. Cir. 1997)."

The configuration of Claim 2 has advantages with respect to Reid

A sealing ring according to Reid includes core 2 or 17 made of an elastic end resilient rubber-like material, for example, an elastically deformable O-ring (col. 4, lines 32 and 33), which is entirely covered by covering 3 or 17 (which includes lips 4 or 16), which is made of a tougher and less elastic material than the core material (col. 4, lines 37-39), for example, a polytetraflourethylene (PTFE) sheath (col. 3, lines 69-71). As noted above, Reid explicitly teaches that the cover and the core are not to be joined together. Thus, the cover (including the sealing lips) and the core are discrete and separate elements, which are not joined together in any manner and which are displaceable with respect to each other, unlike the configuration of base

ring and stiffening ring recited in Claim 2. Reid's configuration of core and lips results in numerous detrimental effects upon the sealing ring during compression of the sealing ring, including, but not limited to:

1. Upon compression of the sealing ring, differential elastic deformation and subsequent differential displacement, of the core, sealing lips, and cover can result in the formation of folds or bends in the respective materials, causing damage, in particular, to the cover, and subsequent degradation or failure of the sealing ring. The joining of the base ring and the stiffening ring (which is integral to the protective layer) as recited in Claim 2 prevents or minimizes such differential displacement and subsequent folds or bends.
2. When Reid's sealing ring is compressed by a rotary motion about a central axis of the sealing ring, for example, as would occur for use of the ring with threaded joints of valve bodies in pipelines or pump casings, the core, stiffening ring, and covering can rotationally shift with respect to one another, resulting in damage to the components of the sealing ring and failure of the sealing ring. The joining of the base ring and the stiffening ring (which is integral to the protective layer) as recited in Claim 2 prevents or minimizes such shifting and damage.

Other previously cited prior art does not teach, suggest, or motivate a stiffening ring connected to the base ring

U.S. Patent No. 2,580,546 (Hobson Jr.) does not teach, suggest, or motivate a stiffening ring. Hobson teaches a PTFE jacket partially surrounding a core, in fact, the patent is titled "Jacketed Gasket." Assuming *arguendo* that Hobson's jacket is analogous to the protective coating recited in Claim 2, Hobson does not teach, suggest, or motivate joining the jacket to the core. In fact, Hobson teaches against such joining. For example, Hobson teaches that adhering the jacket to the core is not necessary since the parts are dimensioned for a snug fit (col. 5, lines 1-5). The only adhesion Hobson teaches is for the folded back portions of the jacket shown in Figures 3 and 4 (col. 5, lines 5-11) or securing the ends of PTFE tape that has been wound about the core (col. 4, lines 71-73).

All the teachings of Hobson refer to a jacket or an envelope (col. 3, line 18), or to jacketing the core. The common and well-understood meaning of a jacket or envelope, or jacketing is that the jacket or envelope is not joined to the object being jacketed or enveloped. Hobson teaches that the jacket 'embraces' the upper and lower faces of the core (col. 1, lines 28-33; and col. 4, lines 55 and 56), not that the jacket adheres to the faces. This 'non-connection' of the jacket and core is further reinforced and taught by various embodiments of Hobson's, for example, Figures 3 and 4 teach folding the jacket to hold the jacket in place. Further, the materials taught by Hobson are not conducive to joining of the core and jacket. For example, in Figure 2, layer 11, in contact with the jacket, is woven asbestos, a material that does not lend itself to adhesion to PTFE.

U.S. Patent No. 3,215,442 (Papenguth) does not teach, suggest, or motivate a stiffening ring fixed to a base ring. Assuming *arguendo* that ring 40 of Papenguth is in some way analogous to the stiffening ring recited in Claim 2, Papenguth teaches that the ring and packing are separate. For example, in Figure 9, the ring and packing are interfaced by rib 42 of the packing and groove 43 of the ring (col. 4, lines 22-27).

Assuming *arguendo* that inner ring 60 in Figure 7 of U.S. Patent No. 3,195,906 (Moyers) is in some way analogous to the stiffening ring recited in Claim 2, Moyer teaches that the ring is not fixed to the sealing ring. For example, a rib and groove arrangement is used in Figure 7.

For all the reasons noted *supra*, the cited prior art fails to teach, suggest, or motivate all the elements of Claim 2; therefore, Claim 2 is patentable over the cited prior art. Claims 3, 4, 9, 13, and 15 dependent from Claim 2, enjoy the same distinction with respect to the cited prior art.

Claim 28

Claim 28, dependent from Claim 2, recites: "further comprising an adhesive layer joining the stiffening ring to the base ring; or wherein the stiffening ring is vulcanized into the base ring (2) or wherein the stiffening ring is joined to the base ring by injection molding."

As noted *supra*, the prior art teaches against the Claim 2 recitation: "wherein the stiffening ring is joined to the inner circumferential edge of the base ring (2) or the outer circumferential edge of the base ring (2) in a firm or form-locking manner" Claim 28 narrows the

Claim 2 limitations regarding joining the base ring and the stiffening ring; therefore, the prior art also teaches against the limitations of Claim 28.

Claim 29

Claim 29, dependent from Claim 2, recites: "wherein the protective layer is joined to the base ring." There is no teaching in Reid or Sheesley to join a protective layer, present over all but an outer circumferential edge of the base ring, to the base ring. In fact, Sheesley does not teach a protective layer. Assuming *arguendo* that other previously cited prior art, such as Hobson, otherwise teaches the protective layer recited in Claim 2, Hobson fails to teach joining the layer to the base ring. Other previously cited prior art, such as Papenguth; U.S. Patent 3,195,906 (Moyers); and U.S. Patent 3,355,181 (Olson) either fail to teach a protective layer or fail to teach a protective layer covering all but the outer circumference of the base ring as recited in Claim 2.

Claims 7, 8, 11, and 12 have been cancelled.

Claims 23-25

Claims 23-25 each recite the configuration noted above for Claim 2, that is, a stiffening ring disposed along the inner or outer circumferential edge of the base ring and joined to the base ring. Therefore, the arguments presented for Claim 2 are applicable to Claim 23-25 and Claims 23-25 are patentable over the cited prior art.

Claims 26 and 27

Claims 26 and 27 have been cancelled.

Applicants courteously request that the rejection be removed.

Conclusion

Applicants respectfully submit that all pending claims are now in condition for allowance, which action is courteously requested. The Examiner is invited and encouraged to contact the undersigned agent of record if such contact will facilitate an efficient examination and allowance of the application.

Respectfully submitted,

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